UCRL-JC-123551 Abs

Deflection, Spraying and Induced Scattering of Intense Laser Beams in Plasmas*

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Some work on laser beam spraying, deflection, and induced scattering is presented. After a brief review of recent calculations and experiments on beam spraying[1] due to filamentation, we discuss a simple model for beam deflection[2, 3] due to self-consistent profile modifications near the sonic point in an expanding plasma. This model provides useful insights on laser beam deflection, its scaling, and the importance of zeroth-order profile changes. We touch base with F3D simulation[3] and experiments.[4] Finally, some initial discussion of the competition of stimulated Raman and Brillouin scattering is given.

1. P. Young, J. Hammer, S. Wilks, and W. Kruer, Phys. Plasma 2, 2825 (1995).
2. Harvey Rose, submitted to Phys. Plasma (1995).
3. D. Hinkel, E. Williams, and B. Still, submitted to Phys. Rev. Lett. (1995).
4. J. Moody et al., submitted to PRL (1995).

* Work performed under the auspices of the U.S. Department of Energy by the Lawrence Livermore National Laboratory under Contract W-7405-Eng-48.